

What is claimed is:

1. A microscopic image capture apparatus, comprising:

5 a low-magnification dividing device dividing an entire area of a slide glass on a stage into field size sections of a predetermined low-powered objective lens;

a transfer device for relatively transferring
10 the slide glass on the stage in a direction perpendicular to an optical axis of the objective lens by relatively transferring the stage in the direction perpendicular to the axis of the objective lens;

15 an image information obtaining device obtaining image information for each field size section each time the entire area of the slide glass is sequentially transferred by the transfer device by the field size section of the low-powered
20 objective lens;

a high-magnification dividing device dividing the image information for each field size section obtained by the image information obtaining device into high-magnification size sections corresponding
25 to the magnification of a predetermined high-

powered objective lens;

a sample image discrimination device checking whether or not there is sample image information in the image information for each high-magnification size section into which the image information is
5 divided by the high-magnification dividing device, discriminating the high-magnification size section having the image information containing the sample image information as a sample image inclusion
10 section from the high-magnification size section having the image information containing no sample image information as a sample image exclusion section;

a high-magnification image capture device
15 capturing a high-magnification image using the predetermined high-powered objective lens only for the high-magnification size section discriminated as the sample image inclusion section; and

an image information generation device for
20 generating high-magnification composite image information about a sample on the slide glass by generating the high-magnification image such that the relative position between the area of the high-magnification size section having the image
25 information obtained from the image captured by the

high-magnification image capture device and the area of the high-magnification size section not captured by the high-magnification image capture device can be correctly maintained.

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2. The apparatus according to claim 1, further comprising

an area determination device determining a length and a width of a minimum area of the slide
10 glass containing all the high-magnification size sections defined as sample image inclusion sections by the sample image discrimination device.

3. The apparatus according to claim 1, wherein
15 the image information generation device comprises a dummy data assignment device for assigning dummy data predetermined to be close to a background of the sample image as image information about the high-magnification size section not
20 captured by the high-magnification image capture device.

4. The apparatus according to claim 1, further comprising
25 an image information generation device

generating arbitrary image information containing a different magnification, position or area according to the high-magnification image information generated by the image information generation
5 device.

5. The apparatus according to claim 1, further comprising
a position determination device, wherein
10 the image information generation device obtains image information for a field size section while horizontally transferring an entire area of the capture position determined by the position determination device for each field size section of
15 a low-powered objective lens by the transfer device.

6. A microscopic image capture apparatus, comprising:
a macro capture device collectively capturing
20 the entire area of a slide glass;
a macro image information dividing device dividing image information on the slide glass obtained by the capturing operation by the macro capture device into high-magnification size
25 sections corresponding to the magnification of a

predetermined high-powered objective lens;

a sample image discrimination device checking whether or not there is sample image information in the image information for each high-magnification size section into which the image information is divided by the macro image information dividing device, discriminating the high-magnification size section having the image information containing the sample image information as a sample image inclusion section from the high-magnification size section having the image information containing no sample image information as a sample image exclusion section;

a high-magnification image capture device capturing a high-magnification image using the predetermined high-powered objective lens only for the high-magnification size section discriminated as the sample image inclusion section; and

an image information generation device generating high-magnification composite image information about a sample on the slide glass by generating the high-magnification image such that a relative position between the area of the high-magnification size section having the image information obtained from the image captured by the

high-magnification image capture device and the area of the high-magnification size section not captured by the high-magnification image capture device can be correctly maintained.

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7. The apparatus according to claim 6, wherein the image information generation device comprises a dummy data assignment device for assigning dummy data predetermined to be close to a background of the sample image as image information about the high-magnification size section not captured by the high-magnification image capture device.

15 8. The apparatus according to claim 6, further comprising

an image information generation device generating arbitrary image information containing a different magnification, position or area according to the high-magnification image information generated by the image information generation device.

9. A microscopic image capture apparatus, comprising:

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a low-powered objective lens;
a high-powered objective lens;
a switch device switching between the low-powered objective lens and the high-powered
5 objective lens;
a stage loaded with a sample storage device;
an illumination device illuminating a sample stored by the sample storage device;
an image information obtaining device
10 obtaining image information about the sample by capturing a sample image generated using the low-powered objective lens and the high-powered objective lens;
a stage drive mechanism transferring the stage
15 on a plane orthogonal to an optical observation axis of a microscope;
a high-magnification field section device dividing a low-magnification image of the sample obtained using the low-powered objective lens into
20 high-magnification field sections corresponding to field of the high-powered objective lens;
a sample image presence/absence check device checking presence/absence of sample image information for each of the high-magnification
25 field sections divided from the low-magnification

image;

a high-magnification image capture device
obtaining a high-magnification image by the high-
powered objective lens from the high-magnification
5 field sections determined to have the sample image
information by the check device; and

an image information generation device
generating a high-magnification composite image
having same field as the low-magnification image by
10 combining the obtained high-magnification images in
corresponding positions of high-magnification field
sections.

10. The apparatus according to claim 9, wherein
15 the image information generation device
comprises a dummy data assignment device for
assigning dummy data predetermined to be close to a
background of the sample image as image information
about the high-magnification size section not
20 captured by the high-magnification image capture
device.

11. The apparatus according to claim 9, further
comprising
25 an image information generation device

generating arbitrary image information containing a different magnification, position or area according to the high-magnification image information generated by the image information generation
5 device.

12. A microscopic image capturing method, comprising:

dividing an entire area of a slide loaded with
10 a sample into first field size sections corresponding to a low-powered objective lens;

obtaining a low-magnification image of the slide glass for each of the first field size sections using the low-powered objective lens;

15 dividing the obtained low-magnification image for each of the first field size sections into second field size sections corresponding to a high-powered objective lens;

checking presence/absence of sample image
20 information for each of the second field size sections;

obtaining a high-magnification image using the high-powered objective lens for the second field size section determined in the check to have the
25 sample image information; and

generating a high-magnification composite image of the sample by combining the obtained high-magnification image corresponding to a relative position of the second field size section.

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13. The method according to claim 12, wherein dummy data similar to a background of a sample image is assigned to the second field size section for which the high-magnification image is not
10 obtained.

14. The method according to claim 12, wherein arbitrary image information containing a different magnification, position or area is
15 generated and displayed based on the generated high-magnification composite image.

15. A microscopic image capturing method, comprising:
20 collectively macro-capturing an entire area of a slide loaded with a sample;
dividing macro image obtained by the macro-capturing into field size sections corresponding to a high-powered objective lens;
25 checking presence/absence of sample image

information for each of the field size sections of the divided macro image;

obtaining a high-magnification image using the high-powered objective lens for the field size section determined in the check to have the sample image information; and

generating a high-magnification composite image of the sample by combining the obtained high-magnification image corresponding to a relative position of the field size section.

16. The method according to claim 15, wherein dummy data similar to a background of a sample image is assigned to the field size section for which the high-magnification image is not obtained.

17. The method according to claim 15, wherein arbitrary image information containing a different magnification, position or area is generated and displayed based on the generated high-magnification composite image.

18. A method of generating a high-magnification composite image of a predetermined area of a sample, comprising:

dividing a predetermined area of the sample into field sections corresponding to a high-powered objective lens;

checking presence/absence of sample image
5 information about the sample for each of the divided field sections;

obtaining a high-magnification image using the high-powered objective lens for the field section determined in the check to have the sample image
10 information; and

generating a high-magnification composite image of the sample by combining the obtained high-magnification image corresponding to a relative position of the field size section.

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19. The method according to claim 18, wherein

dummy data similar to a background of a sample image is assigned to the second field size section for which the high-magnification image is not
20 obtained.

20. A microscopic captured image display method, comprising:

dividing a predetermined area of the sample
25 into field sections corresponding to a high-powered

objective lens;

checking presence/absence of sample image
information about the sample for each of the
divided field sections;

5 obtaining a high-magnification image using the
high-powered objective lens for the field section
determined in the check to have the sample image
information;

generating a high-magnification composite
10 image of the sample by combining the obtained high-
magnification image corresponding to a relative
position of the field size section; and

generating and displaying arbitrary image
information containing a different magnification,
15 position or area based on the generated high-
magnification composite image.

21. The method according to claim 20, wherein

the image information is generated in advance
20 as plural stages of image information corresponding
to a magnification of an objective lens, and
displayed on a display device as necessary.

22. A microscope captured image access system,
25 comprising:

dividing a predetermined area of the sample into field sections corresponding to a high-powered objective lens;

checking presence/absence of sample image
5 information about the sample for each of the divided field sections;

obtaining a high-magnification image using the high-powered objective lens for the field section determined in the check to have the sample image
10 information;

generating a high-magnification composite image of the sample by combining the obtained high-magnification image corresponding to a relative position of the field size section;

15 generating arbitrary image information containing a different magnification, position or area based on the generated high-magnification composite image;

storing the generated high-magnification
20 composite image containing a different magnification, position or area in a network server; and

allowing the high-magnification composite image stored in the network server to be accessed
25 from an arbitrary client device.